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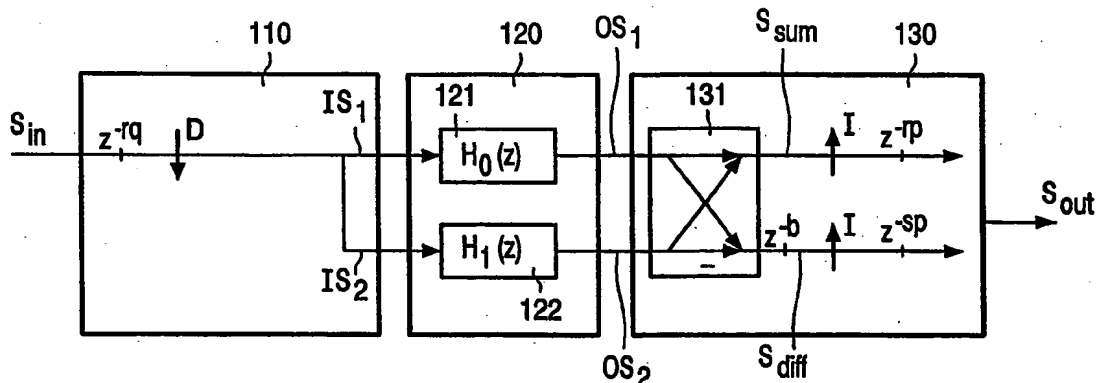
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(54) Title: MULTIRATE FILTER AS WELL AS DISPLAY SYSTEM AND MOBILE TELEPHONE COMPRISING SAID MULTIRATE FILTER



(57) Abstract: A multirate filter according to the invention comprises, a) an input unit (10) for receiving an input signal (S_{in}) and for providing a plurality of intermediate signals (IS_1 , IS_2) in response to said input signal, b) a filter unit (20) coupled to the input unit (10), and c) an output unit (30) coupled to the filter unit (20), for generating an output signal (S_{out}). The filter unit (20) comprises at least a first and a second filter module (21, 22), with a transfer function $H_0(z)$ and a transfer function $H_1(z)$ respectively, which are mutually related according to the relations $H_0(z) = c_0(H_B(z) + M_{\alpha,\psi}H_B(z))$ and $H_1(z) = c_1(H_B(z) + M_{\alpha,\psi}H_B(z))$ wherein, $M_{\alpha,\psi}(H_B(z)) = \alpha z^{-2\psi} H_B^*(z^{-1})$, and wherein Formula (I), being the z-transform of $h_b[m]$. The multirate filter comprises a combination unit (11) coupled to said filter modules (21, 22) for generating a first combination signal (S_{sum}) and a second combination signal (S_{diff}).